

## Case 2905

***Labrus* Linnaeus, 1758, *Cichlasoma* Swainson, 1839 and *Polycentrus* Müller & Troschel, 1848 (Osteichthyes, Perciformes): proposed conservation of usage by the designation of neotypes for *Labrus bimaculatus* Linnaeus, 1758 and *L. punctatus* Linnaeus, 1758**

R. Fricke

*Staatliches Museum für Naturkunde, Rosenstein 1, D-70191 Stuttgart, Germany*

C.J. Ferraris

*Department of Ichthyology, California Academy of Sciences, Golden Gate Park, San Francisco, California 94118, U.S.A.*

**Abstract.** The specific name of *Labrus bimaculatus* Linnaeus, 1758 has been used for two very different fish. It is used for a common northeastern Atlantic/Mediterranean species (the type species of *Labrus* Linnaeus, 1758; family LABRIDAE) and for a common freshwater species of South America (which has been wrongly treated as the type species of *Cichlasoma* Swainson, 1839; family CICHLIDAE). The type species of *Cichlasoma* is the nominal species *L. punctatus* Linnaeus, 1758. It is proposed that the name *L. bimaculatus* should be maintained for the labrid species whilst adopting *C. punctatum* for the cichlid taxon now known as *C. bimaculatum*. However, the presumed holotype of *L. bimaculatus* is a specimen of *Cichlasoma*, and the lectotype of *L. punctatus* is a specimen of another South American species, *Polycentrus schomburgkii* Müller & Troschel, 1848 (the type species of *Polycentrus* Müller & Troschel, 1848; family NANDIDAE). The purpose of this application is to set aside the original type specimens of *L. bimaculatus* and *L. punctatus* and to designate neotypes in accordance with the current usages of the generic names *Labrus* and *Cichlasoma* respectively, and thus to stabilize the family-group names LABRIDAE and CICHLIDAE. Designation of the *L. punctatus* neotype will remove the names *L. punctatus* and *Cichlasoma* from the formal synonymy of *P. schomburgkii* and *Polycentrus* and thereby stabilize the current usage of the latter names.

**Keywords.** Nomenclature; taxonomy; Osteichthyes; Perciformes; LABRIDAE; CICHLIDAE; NANDIDAE; *Labrus*; *Cichlasoma*; *Polycentrus*.

---

1. Linnaeus (1758, pp. 282–288) used the name *Labrus* for 40 nominal species of fish. He based (p. 285) his description of *Labrus bimaculatus* on his 1754 (p. 66, pl. 31, fig. 6) description of a specimen in the Museum Adolphi Friderici (see para. 4 below). The locality was given as the Mediterranean. Bonaparte ([1841]) is often cited as having designated *L. bimaculatus* as the type species of *Labrus* (see, for example, Gomon & Forsyth, 1990, p. 873). However, Bonaparte referred only to the junior synonym *L. vetula* Bloch, 1792, a nominal species not originally included in *Labrus*, and his designation, which did not mention *L. bimaculatus*, is therefore invalid. The

first valid type species designation for *Labrus* is that of *L. bimaculatus* by Jordan (1891, p. 607). This has been followed by many recent authors (see, for example, Bauchot, 1963, p. 79; Quignard, 1966, p. 23). *Labrus* is the type genus of the family LABRIDAE (published as Labridi by Bonaparte, [1832], p. [10]) which contains some 500 taxa (see Nelson, 1994, p. 386) and is the second largest family of marine fishes.

2. Linnaeus (1758, pp. 285–286) described *Labrus punctatus* based on two sources, his own description (1754, p. 66, pl. 31, fig. 5) of a specimen in the Museum Adolphi Friderici and Gronovius's description (1754, p. 36, no. 87) of 'Labrus bruneus' from Surinam. The latter was illustrated by Gronovius in 1756 (pl. 5, fig. 4). The type locality of *punctatus* was given as Surinam.

3. Swainson (1839, p. 230) described the genus *Cichlasoma* (family CICHLIDAE Bleeker, 1859, p. xviii; published as Cychloidei). *Labrus punctatus* Bloch, 1792 (pp. 20–22, pl. 295, fig. 1; = the nominal species *L. punctatus* Linnaeus, 1758) was given as the single included species.

4. Fernholm & Wheeler (1983) discussed the identity of Linnaean fish material. They assumed (p. 253) that the single specimen of *Labrus bimaculatus* in the Adolphi Friderici Museum collection (now deposited in the Naturhistoriska Riksmuseet, Stockholm, catalogue no. NRM LP 7) is the holotype and recorded it as a cichlid belonging in the New World genus *Cichlasoma*. They commented, following earlier authors, on the frequency with which Linnaeus had confused the localities of taxa. Fernholm & Wheeler (1983, p. 252) noted that the nominal species *Labrus punctatus* was composite, the specimen in the Museum Adolphi Friderici collection (Naturhistoriska Riksmuseet catalogue no. NRM LP 4) belonging to the taxon currently called *Polycentrus schomburgkii* Müller & Troschel, 1848 (a South American species, the type of *Polycentrus* Müller & Troschel, 1848; family NANDIDAE), whilst Gronovius's (1754) description referred to a member of the CICHLIDAE, identified by a number of authors (including Eigenmann, 1912, p. 495) as *Cichlasoma bimaculatum* (Linnaeus, 1758). They noted that in 1758 (but not in 1754) Linnaeus had recorded incorrectly the meristic data of the *punctatus* specimen, and that his (1754) illustration was rather poor; both of these factors had previously obscured its true identity as a nandid. Gronovius's specimen is lost. Kullander (1983, p. 84) designated the remaining syntype, Linnaeus's specimen in the Adolphi Friderici Museum collection, as the lectotype of *Labrus punctatus*. This removed *L. punctatus* from the cichlids, placed *punctatus* and *Cichlasoma* in the NANDIDAE and rendered the names senior subjective synonyms of *Polycentrus schomburgkii* and *Polycentrus*.

5. The specific name of *Labrus punctatus* Linnaeus, 1758 is not in use either in the CICHLIDAE or the NANDIDAE. An application (Case 2880) for the conservation of the much used nandid (leaf fish) specific name of *Polycentrus schomburgkii* Müller & Troschel, 1848 (the type species of *Polycentrus* Müller & Troschel, 1848) by suppressing the senior subjective synonym *L. punctatus* (see para. 4 above) was submitted by Dr Hans-Joachim Paepke (Zentralinstitut Museum für Naturkunde der Humboldt-Universität zu Berlin, Institut für Systematische Zoologie, Berlin) and published in BZN 50: 215–218 (September 1993). The name *P. schomburgkii* has had nearly 140 years of usage and, as noted in Dr Paepke's application, this has not been influenced by Kullander's (1983) lectotype designation. Of a number of cited post-1983 authors (BZN 50: 216, para. 5) only one (Stawikowski, 1992, p. 687) had adopted *Polycentrus punctatus*. The 30 syntypes (two adults and 28 juveniles) of

*P. schomburgkii*, collected in the Essequibo (British Guiana, now Guyana), are housed in the Zoologisches Museum der Humboldt-Universität of Berlin, catalogue nos. ZMB 1024 and ZMB 20604.

6. The name *Labrus bimaculatus* Linnaeus, 1758 is well known for the cuckoo wrasse, a common northeastern Atlantic and Mediterranean labrid fish, used by numerous authors (see, for example, Bauchot & Quignard, 1973, p. 426; Quignard & Pras, 1987, p. 927; Fischer, Schneider & Bauchot, 1987, p. 1143; Fricke, 1987, p. 111; Gomon & Forsyth, 1990, p. 875) and has appeared in recent national and international catalogues of endangered species (see, for example, Magalhaes & Rogado, 1993, p. 74; Fricke et al., 1994, 1995; Fricke, Berghahn & Neudecker, 1995, p. 111). The name *Cichlasoma bimaculatum* (Linnaeus, 1758), also based on *Labrus bimaculatus* Linnaeus (1758, p. 285), has been used for the common and widespread two-spotted cichlid fish of South America (see, for example, Steindachner, 1875, p. 82; Haseman, 1911, p. 339; Miranda Ribeiro, 1915, p. 60; Axelrod, Burgess, Pronek & Walls, 1986, p. 337). However, the species was restricted by Kullander (1983, pp. 65–89, pls. 1 and 2; 1986, p. 335) to a form only distributed from Guiana to Venezuela. The name has therefore been unstable; it was applied in recent years to what is now a complex of species. Thus, references to *C. bimaculatum* in, for example, the Amazon are incorrect. Eigenmann (1912, p. 494) cited *L. bimaculatus* as the type of *Cichlasoma*; although an invalid designation, *L. bimaculatus* has been treated as the type by a number of recent authors (Kullander, 1983, pp. 9, 65–89; 1986, p. 335; Kullander & Nijssen, 1989, p. 131; Eschmeyer & Bailey, 1990, p. 95), while the name *Cichlasoma punctatum* has not been used (para. 5 above).

7. Recognition that the holotype of *Labrus bimaculatus* Linnaeus, 1758 is a cichlid (para. 4 above) would mean that *Labrus* Linnaeus, 1758 is formally a senior subjective synonym of *Cichlasoma* Swainson, 1839 and, since there is no junior synonym for *Labrus* as currently understood, a new name would be required for this genus. The next available specific name, that of *Labrus mixtus* Linnaeus, 1758, would be adopted for the common northeastern Atlantic labrid species. The family-group name LABRIDAE Bonaparte, [1832] would be used in place of CICHLIDAE Bleeker, 1859; the name CICHLIDAE, which refers to the second largest family of freshwater fishes containing some 680 taxa (see Nelson, 1984, pp. 315–317), would be replaced by the next available synonym, PHARYNGODOPILIDAE Cocchi, 1864 (p. 89; type genus *Pharyngodopilus* Cocchi, 1864). These changes would severely threaten the stability of nomenclature. We propose that the use of the name *Labrus bimaculatus* Linnaeus, 1758 should be maintained in the LABRIDAE, and that *Cichlasoma punctatum* (Linnaeus, 1758) should be adopted for the cichlid species (see para. 8 below). Wheeler (1969, p. 368) used the name *Labrus mixtus* Linnaeus, 1758 (p. 287), a contemporary synonym for the Mediterranean and Atlantic labrid, but most authors continue to use the name *L. bimaculatus*. We propose that the cichlid holotype of *L. bimaculatus* be set aside and that the labrid usage of the name be stabilized by the designation of a neotype. The proposed specimen is a female (SL 299 mm), catalogue no. SMNS 12625 in the Staatliches Museum für Naturkunde, Stuttgart, Germany, collected by H.A. Pagenstecher in 1865 from Palma de Mallorca (39°34' N, 2°39' E) in the Balearic Islands, Spain.

8. We propose that the specific name of *Labrus punctatus* Linnaeus, 1758 should be adopted for the South American cichlid by setting aside Kullander's (1983) nandid

lectotype (para. 4 above) and designating a cichlid neotype. The proposed specimen is catalogue no. CAS-SU 53337 (SL 102 mm) in the California Academy of Sciences, San Francisco, U.S.A., collected by I.D. White and party on 5 March 1959 south of Paramaribo, near Zanderij airfield, Surinam (5°27'N, 55°12'W). This designation removes *L. punctatus* and *Cichlasoma* from the formal synonymy of *Polycentrus schomburgkii* Müller & Troschel, 1848 and *Polycentrus* Müller & Troschel, 1848; as a means of conserving the latter names it is acceptable to Dr Paepke (in litt., September 1995; see para. 5 above) and his application to suppress *punctatus* will not now be pursued. As noted in paras. 5 and 6 above, the name *Cichlasoma bimaculatum* (Linnaeus, 1758) has been used for the cichlid fish, and treated as the type species of *Cichlasoma* Swainson, 1839, whilst *punctatus* has remained virtually unused. However, the name *bimaculatus* is used much more commonly in the labrids than in the cichlids. Additionally, the nomenclatural situation for northeast Atlantic labrid fish is stable whilst names for South American cichlids are still far from stable and there have been frequent recent changes. For these reasons it is appropriate to change the cichlid use of *bimaculatus* rather than the labrid one, and to adopt *punctatus* as the name for the South American fish.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to set aside all previous type fixations for the following nominal species:
  - (a) *Labrus bimaculatus* Linnaeus, 1758 and to designate as neotype the female specimen in the Staatliches Museum für Naturkunde, Stuttgart, catalogue no. SMNS 12625, proposed in para. 7 above;
  - (b) *Labrus punctatus* Linnaeus, 1758 and to designate as neotype the specimen in the California Academy of Sciences, San Francisco, catalogue no. CAS-SU 53337, proposed in para. 8 above;
- (2) to place on the Official List of Generic Names in Zoology the following names:
  - (a) *Labrus* Linnaeus, 1758 (gender: masculine), type species by subsequent designation by Jordan (1891) *Labrus bimaculatus* Linnaeus, 1758;
  - (b) *Cichlasoma* Swainson, 1839 (gender: neuter), type species by monotypy *Labrus punctatus* Linnaeus, 1758;
  - (c) *Polycentrus* Müller & Troschel, 1848 (gender: masculine), type species by monotypy *Polycentrus schomburgkii* Müller & Troschel, 1848;
- (3) to place on the Official List of Specific Names in Zoology the following names:
  - (a) *bimaculatus* Linnaeus, 1758, as published in the binomen *Labrus bimaculatus* and as defined by the neotype designated in (1)(a) above (specific name of the type species of *Labrus* Linnaeus, 1758);
  - (b) *punctatus* Linnaeus, 1758, as published in the binomen *Labrus punctatus* and as defined by the neotype designated in (1)(b) above (specific name of the type species of *Cichlasoma* Swainson, 1839);
  - (c) *schomburgkii* Müller & Troschel, 1848, as published in the binomen *Polycentrus schomburgkii* (specific name of the type species of *Polycentrus* Müller & Troschel, 1848).

## References

- Axelrod, H.R., Burgess, W.E., Pronek, N. & Walls, J.G. 1986. *Dr Axelrod's atlas of freshwater aquarium fishes*, Ed. 2. 782 pp., 481 pls. T.F.H. Publications, Neptune City, New Jersey.

- Bauchot, M.-L. 1963. Catalogue critique des types de poissons du Muséum National d'Histoire Naturelle. *Publications du Muséum National d'Histoire Naturelle* (Paris), 20: 1-195.
- Bauchot, M.-L. & Quignard, J.-P. 1973. Labridae. Pp. 426-443 in Hureau, J.C. & Monod, Th. (Eds.), *Checklist of the fishes of the north-eastern Atlantic and of the Mediterranean*, vol. 1. xxii, 683 pp. UNESCO, Paris.
- Bleeker, P.E.A. 1859. Enumeratio Specierum Piscium hucusque in Archipelago Indico observatarum ... *Verhandelingen der Natuurkundige Vereeniging in Nederlandsch Indië*, 6: i-xxxvi, 1-276.
- Bloch, M.E. 1792. *Naturgeschichte des ausländischen Fische*, part 6. vi, 126 pp., pls. 289-323. Königl. Akad. Kunsthändl. Morino, Berlin.
- Bonaparte, C.L.J.L. [1832], [1841]. *Iconografia della fauna italica per la quattro classi degli animali vertebrati*, vol. 3 (Pesci), fasc. 1 ([1832]); fasc. 30 ([1841]). Unpaginated. Rome.
- Cocchi, I. 1864. Monografia dei Pharyngodopilidae, nuova famiglia di pesci Labroidi. *Annali del R. Museo di Fisica e Storia Naturale di Firenze*, (N.S.)1: 63-153. (Published in the serial in 1866 but issued as a separate in 1864).
- Eigenmann, C.H. 1912. The fresh-water fishes of British Guiana, including a study of the ecological grouping of species and the relation of the fauna of the plateau to that of the lowlands. *Memoirs of the Carnegie Museum*, 5: 1-578.
- Eschmeyer, W.N. & Bailey, R.M. 1990. Genera of Recent fishes. Pp. 7-433 in Eschmeyer, W.N., *Catalog of the genera of Recent fishes*, part 1. v, 697 pp. California Academy of Sciences, San Francisco.
- Fernholm, B. & Wheeler, A. 1983. Linnaean fish specimens in the Swedish Museum of Natural History. Stockholm. *Zoological Journal of the Linnean Society*, 78(3): 199-286.
- Fischer, W., Schneider, M. & Bauchot, M.-L. 1987. *Fiches FAO d'identification des espèces pour les besoins de la pêche. Méditerranée et Mer Noire. Zone de Pêche 37. Révision 1*, vol. 2 (Vertébrés). Pp. i-v, 763-1529. FAO, Rome.
- Fricke, R. 1987. *Deutsche Meeresfische. Bestimmungsbuch*. 219 pp. Deutscher Jugendbund für Naturbeobachtung, Hamburg.
- Fricke, R., Berghahn, R. & Neudecker, T. 1995. Rote Liste der Rundmäuler und Meeresfische des deutschen Wattenmeer- und Nordseebereichs (mit Anhängen: nicht gefährdete Arten). *Schriftenreihe für Landschaftspflege und Naturschutz*, 44: 101-113.
- Fricke, R., Berghahn, R., Neudecker, T., Berg, S., Krog, C., Muus, B., Nielsen, J. & Wolff, W.J. 1995. Fishes and lampreys. 15 pp. in: *Report on the trilateral Red Data List for the Wadden Sea area*. Common Secretariat for the Cooperation on the Protection of the Wadden Sea, Wilhelmshaven.
- Fricke, R., Berghahn, R., Rechlin, O., Neudecker, T., Winkler, H., Bast, H.-D. & Hahlbeck, E. 1994. Rote Liste und Artenverzeichnis der Rundmäuler und Fische (Cyclostomata Pisces) im Bereich der deutschen Nord- und Ostsee. *Schriftenreihe für Landschaftspflege und Naturschutz*, 42: 157-176.
- Gomon, M.F. & Forsyth, P. 1990. Labridae. Pp. 868-882 in Quéro, J.C., Hureau, J.C., Karrer, C., Post, A. & Saldanha, L. (Eds.), *Check-list of the fishes of the eastern tropical Atlantic*, vol. 2. Pp. 519-1080. Junta Nacional de Investigação Científica e Tecnologia, European Ichthyological Union & UNESCO, Lisbon & Paris.
- Gronovius, L.T. 1754. *Museum ichthyologicum sistens piscium ...*, vol. 1. 70 pp., pls. 1-4. Haek, Lugduni Batavorum.
- Gronovius, L.T. 1756. *Musei ichthyologici tomus secundus sistens piscium ...* 88 pp., pls. 5-7. Leiden.
- Haseman, J.D. 1911. An annotated catalog of the cichlid fishes collected by the expedition of the Carnegie Museum to central South America, 1907-10. *Annals of the Carnegie Museum*. 7: 329-373.
- Jordan, D.S. 1891. A review of the labroid fishes of America and Europe. *Report of the U.S. Fish Commission*, 15 (for 1887): 599-699.
- Kullander, S.O. 1983. *A revision of the South American cichlid genus Cichlasoma (Teleostei: Cichlidae)*. 296 pp., 14 pls. Naturhistoriska Riksmuseet, Stockholm.
- Kullander, S.O. 1986. *Cichlid fishes of the Amazon River drainage of Peru*. 431 pp., 38 pls. Swedish Museum of Natural History, Stockholm.

- Kullander, S.O. & Nijssen, H. 1989. *The cichlids of Surinam* (Teleostei: Labroidei). xxxii, 256 pp. Brill, Leiden.
- Linnaeus, C. 1754. Part 4. Pisces. Pp. 51–80, pls. 25–33 in: *Museum S:ae R:ae M:tis Adolphi Friderici Regis ... in quo Animalia variora imprimis, et exotica: Quadrupedia, Aves, Amphibia, Pisces, Insecta, Vermes describuntur et determinantur ...* xxx, 96, [8] pp., 33 pls. Holmiae.
- Linnaeus, C. 1758. *Systema Naturae*, Ed. 10, vol. 1. 824 pp. Salvii, Holmiae.
- Magalhaes, F. & Rogado, L. (Eds.). 1993. *Livro vermelho dos vertebrados de Portugal*, vol. 3 (Peixes marinhos e estuarinos). 146 pp. Secretaria de Estado do Ambiente e do Consumidor, Instituto da Conservação da Natureza, Lisboa.
- Miranda Ribeiro, A. de. 1915. Cichlidae. 70 pp. in *Fauna Brasiliense — Peixes. Archivos do Museu Nacional do Rio de Janeiro*, 17: 1–70.
- Müller, J. & Troschel, F.H. 1848. Fische. Pp. 618–644 in Schomburgk, M.R., *Reisen in Britisch-Guiana in den Jahren 1840–1844, ...*, part 3 (*Versuch einer Zusammenstellung der Fauna und Flora von Britisch-Guiana*), no. 1 (Fauna). Pp. 533–786. Weber, Leipzig.
- Nelson, J.S. 1994. *Fishes of the world*, Ed. 3. xiii, 600 pp. Wiley, New York.
- Quignard, J.-P. 1966. Recherches sur les Labridae des côtes européennes. Systématique et biologie. *Naturalia Monspeliensia* (Zoologie), 5: 7–247.
- Quignard, J.-P. & Pras, A. 1986. Labridae. Pp. 919–942 in Whitehead, P.J.P., Bauchot, M.-L., Hureau, J.-C., Nielsen, J. & Tortonese, E. (Eds.), *Fishes of the North-eastern Atlantic and the Mediterranean*, vol. 2. Pp. 517–1007. UNESCO, Paris.
- Stawikowski, R. 1992. *Polycentrus punctatus*. *Aquarien- und Terrarien-Zeitschrift*, 45(11): 687.
- Steindachner, F. 1875. Beiträge zur Kenntniss der Chromiden des Amazonenstromes. *Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe, Wien*, 71(1): 61–137.
- Swainson, W. 1839. *The natural history of fishes, amphibians and reptiles, or monocardian animals*, vol. 2. 452 pp. Longman, Orme, Brown, Green & Longmans, London.
- Wheeler, A. 1969. *The fishes of the British Isles and north-west Europe*. xvii, 613 pp. Macmillan, London.